Juniper Networks
Steel-Belted Radius

Release Notes

Release 6.0.1
November 2008

Juniper Networks, Inc.
1194 North Mathilda Avenue
Sunnyvale, CA 94089
USA
408-745-2000
www.juniper.net

Part Number: SBR-TD-RN601 Revision 01

Copyright © 1999–2007 Juniper Networks, Inc. All rights reserved. Printed in USA.

Steel-Belted Radius, Juniper Networks, the Juniper Networks logo are registered trademark of Juniper Networks, Inc. in the United States and other countries. Raima, Raima Database Manager and Raima Object Manager are trademarks of Birdstep Technology. All other trademarks, service marks, registered trademarks, or registered service marks are the property of their respective owners. All specifications are subject to change without notice.

Juniper Networks assumes no responsibility for any inaccuracies in this document. Juniper Networks reserves the right to change, modify, transfer, or otherwise revise this publication without notice.

Revision History

Date	Description
10 June 2007	First release of Steel-Belted Radius Release 6.0.1 release notes.
1 December 2008	Updated discussion of 32-bit support for Linux and Windows operating systems.

M08121

Table of Contents

System Requirements 1
- SBR Administrator 1
- Solaris 1
- Linux 3
- Windows 3
- Steel-Belted Radius Appliance 4
- Supported Browsers 4
- Database Servers 5
- Database Clients 5

New Features and Enhancements 6

Known Problems and Limitations 6
- SBR Administrator Issues 6
- Installation and Import Issues 8
- Centralized Configuration Management (CCM) Issues 9
- Miscellaneous Issues 10

Resolved Issues 11
- Problems Resolved in Release 6.0.1 11
- Problems Resolved in Release 6.0.0 11

Documentation Errata 12
- Getting Started Guide 12
- Reference Guide 12

Upgrade Instructions 13

List of Technical Publications 13

Documentation Feedback 13

Modified Open-Source Software 14

Contacting Juniper Technical Support 14

Release Notes
Steel-Belted Radius Release 6.0.1

These release notes accompany Release 6.0.1 of the Steel-Belted Radius software. Before you install or use your new software, you should read these release notes in their entirety, especially the "Known Problems and Limitations" section on page 6.

If the information in these release notes differs from the information found in the product documentation, follow these release notes.

You can find these release notes in Adobe Acrobat (PDF) format on the Juniper Networks Technical Publications Web page, which is located at http://www.juniper.net/techpubs/software/aaa_802/sbr.html.

System Requirements

SBR Administrator

The web-deployed SBR Administrator can co-exist with previous versions of the SBR Administrator software. They do not affect one another.

Solaris

Release 6.0.1 of the Steel-Belted Radius software runs on Sun Solaris 9 (SPARC Platform Edition 8/03 or later) or Sun Solaris 10 (SPARC Platform Edition 3/05 or later) on an UltraSPARC processor.

- The JDBC plug-in has been tested with these databases: MySQL running on Solaris or Linux, Oracle running on Solaris or Linux, and MSSQL.
- On Solaris 9 and 10, the SBR Administrator works with either of two desktop managers: Gnome2-metacity or CDE-dtwm.
- The watchdog program, radiusd, (also referred to as the Auto Restart Module) requires perl 5.8.3. Earlier and later perl versions may cause problems. You must edit the first line of the radiusd script to specify where perl 5.8.3 is installed.

Operating System Patches – Solaris 9

The following patches (or better) are required for Solaris 9:

- 112963-25 ld.so.1
- 111711-16 libC 32-bit
- 111712-16 libC 64-bit
- 117560-03 libmtsk
- 111722-05 libm
- 115697-02 mtmalloc

The following patches (or better) are recommended, but not required, for Solaris 9:

- 112785-56 X11 6.6.1: Xsun
- 113886-28 OpenGL 1.3 32-bit for J2SE
- 113887-28 OpenGL 1.3 64-bit for J2SE
- 113096-03 X11 6.6.1: OWconfig for J2SE

Be sure to obtain your patches directly from Sun (www.sun.com), review the patch README files, and consider making a backup before altering your system.

Operating System Patches – Solaris 10

The following patches (or better) are required for Solaris 10:

- 120900-04 libzonecfg
- 121133-02 zoneadm
- 119254-28 patchadd
- 119578-22 FMA patch for J2SE
- 118822-30 kernel patch for J2SE
- 118833-24 kernel patch
- 120753-02 libmtsk
- 119963-07 libC

The following patches (or better) are recommended, but not required, for Solaris 10:

- 121620-02 MediaLib

Be sure to obtain your patches directly from Sun (www.sun.com), review the patch README files, and consider making a backup before altering your system.

Before You Install on Solaris

Before you upgrade the software on a Solaris server, you should stop the server and create a backup copy of your radius directory and its contents. This will allow you to restore data that is not automatically migrated by the configure script, such as certificates, JRE extensions, and SNMP configuration. (8644)

Linux

Release 6.0.1 of the Steel-Belted Radius software runs on the 32-bit version of SuSE Linux Enterprise Server 9.0 or 10, on Red Hat Enterprise Linux ES 3.0 or 4.0, or Red Hat Enterprise Linux AS 3.0 or 4.0 on an x86 processor. Release 6.0.1 does not run on 64-bit versions of Linux.

- The system must have glibc 2.3.2 or 2.3.3. This is present by default in the supported versions of SuSE 9 and 10 and Red Hat 3 ES and AS Linux. For Red Hat 4 ES or AS, the rpm installer may direct you to obtain a compatibility package obtainable from the vendor.
- The system must not have a BTrieve server. Steel-Belted Radius installs its own BTrieve server, a server that suits only Steel-Belted Radius.
- The watchdog program, radiusd, (also referred to as the Auto Restart Module) requires perl 5.8.3. Earlier and later perl versions may cause problems. You must edit the first line of the radiusd script to specify where perl 5.8.3 is installed.
- The JDBC plug-in has been tested with these databases: MySQL running on Solaris or Linux, Oracle running on Solaris or Linux, and MSSQL.

Before You Install on Linux

- Before you upgrade the software on a Linux server, you should stop the server and create a backup copy of your radius directory and its contents. This will allow you to restore data that is not automatically migrated by the configure script, such as certificates, JRE extensions, and SNMP configuration. (8644)
- When upgrading the software on SuSE Linux in particular, do not use the -U option of rpm. Refer to the *Steel-Belted Radius Getting Started Guide* for more information.

Windows

Release 6.0.1 of the Steel-Belted Radius software runs on on the 32-bit version of Windows XP or Windows Server 2003. Release 6.0.1 does not run on 64-bit versions of Windows.

- Service Pack 2 is required for servers running Windows XP.
- Windows Installer version 2.0 or better is required. Most Windows systems have it, as it has been available since 2001.
- Steel-Belted Radius does not coexist with the RSA Authentication Server Version 6.1 or later. You can upgrade the RSA product to Steel-Belted Radius release 6.0.*x*.

Before You Install on Windows

If you are running the Service Provider Edition of Steel-Belted Radius release 5.0 on Windows and you have added the EAP Expansion Module (which enables PEAP and TTLS) then, after upgrading to Steel-Belted Radius release 6.0.*x*, delete odCCLib_OSSL.dll and odLib_OSSL.dll files from your service directory, if they are present. You may need to stop the Steel-Belted Radius service before you can delete these files.

Steel-Belted Radius Appliance

The Steel-Belted Radius Appliance does not currently support release 6.0.x of the Steel-Belted Radius software.

Supported Browsers

The SBR Administrator configuration application can be launched from any of the following browsers:

- Mozilla Firefox 1.5, 1.7, and 2.0
- Netscape Navigator 7.x and 8.1

Table 1 lists additional browsers supported on particular operating systems.

Table 1: Supported Browsers

Operating System	Supported Browsers
Solaris 9	Netscape Navigator 6.00
Solaris 10	Netscape Navigator 6.00 Mozilla 1.7
Red Hat Linux ES and AS 3.0	Konqueror 3.4
Red Hat Linux ES and AS 4.0	Mozilla Firefox 1.0
SuSE Linux 9	Mozilla 1.6
SuSE Linux 10	Konqueror 3.4 Mozilla Firefox 1.0
Windows XP	Microsoft Internet Explorer 6.0, 6.1, and 7.0
Windows Server 2003	Microsoft Internet Explorer 6.0, 6.1, and 7.0

Java Runtime Environment (JRE) 1.4.2 or newer is required for all browsers, and is available from http://java.sun.com.

You can use the following browsers to viewing Steel-Belted Radius audit logs: (8222):

- Mozilla Firefox 1.5 - 1.7 and 2.0
- Microsoft Internet Explorer 6.0, 6.1, and 7.0

Database Servers

The following databases are recommended for use with the Steel-Belted Radius server running on Solaris or Linux using JDBC or running on Windows using ODBC:

- Oracle 9.2.0
- Oracle 10.2.0
- MS-SQL Server 2000 8.0.2039
- MS-SQL Server 2005 9.0.1399
- MySQL 5.0.27

The following databases are recommended for use with the Steel-Belted Radius server running on Solaris using native Oracle plug-ins:

- Oracle 9.2.0
- Oracle 10.2.0

Database Clients

- If you use Oracle stored procedures on a Steel-Belted Radius server running Windows, choose the Oracle 9i client.
- If you are running Steel-Belted Radius on a Solaris server and using an Oracle database and a native Oracle plug-in, the Steel-Belted Radius server can use any Oracle 9 or 10 client. However, Oracle 9.2.0, and 10.2.0 are recommended.

NOTE: Oracle 10 typically requires a patch for Oracle bug 4516865 to correct the installed Oracle file access modes.

New Features and Enhancements

Steel-Belted Radius release 6.0.1 does not introduce any new features or feature enhancements.

Known Problems and Limitations

The following issues have been identified in the Steel-Belted Radius release 6.0.*x* software. The identifier in brackets is the tracking number in our bug database.

SBR Administrator Issues

- **Online Help**—If Internet Explorer is your default browser and you use the default security settings for Windows XP SP2, Internet Explorer blocks the online help for SBR Administrator and displays the following message:

  To help protect your security, Internet Explorer has restricted this file from showing active content that could access your computer.

  To display the online help for SBR Administrator, click the option to allow blocked content. If a security warning appears, confirm you want to open the online help file.

  If you want to allow online help for SBR Administrator to run without being blocked, you can select **Tools > Internet Options > Advanced** Tab in Internet Explorer and click the **Allow active content to run in files on My Computer** check box. Consult your network administrator before making this change to your security settings. (8545)

- **"Certificate Expiration Warning" value**—If you try to change the certificate expiration warning from the default of 30 days in the Certificates panel of SBR Administrator, a "Validation Error" message appears. You should accept the default of 30 days. (8524)

- **Name of Location Group**—The names of location groups are case-sensitive. You should ensure that the case of a location group name used in the Funk-Radius-Client-Group checklist attribute matches the case used in the Location Groups panel. (8627)

- **Rulesets setting in admin.ini** (GEE/SPE only)—If your admin.ini file contains an AccessLevel section that specifies Certificates = r or Certificates = rw, but does not specify RuleSets = r or RuleSets = rw, then when an administrator with that access level navigates to the Trusted Root Certificates or Certificates panels in SBR Administrator, a Validation Error message box displays the following:

  </pre></BODY></HTML>

  This is likely to occur after an upgrade. To resolve this problem, add RuleSets=r to the definition of the AccessLevel, and restart the Steel-Belted Radius server. (8516)

- **Reports access setting** (GEE/SPE only)—If the [Reports] section of admin.ini is inactive or specifies CurrentUsers=r, then an administrator with the Reports access level will not be able to use the Current Sessions panel.

  To resolve this problem:

  - Uncomment (remove the semi-colon) the [Reports] section of admin.ini

    [Reports]

  - Uncomment the CurrentUsers setting and change its value to rw:

    CurrentUsers=rw

  - Restart the Steel-Belted Radius server. (8535)

- **Inconsistent permissions in access.ini** (GEE/SPE only)—If you remove a right from one of the sections of access.ini (for example, if you delete Profiles=r in the [Users] section or you create a new section with a freely chosen set of rights), then when an administrator goes to a panel where he or she has some but not all of the required access rights, a Validation Error message box displays the following:

  </pre></BODY></HTML>

  To resolve this problem, do not alter the original sections of admin.ini. Instead, create new sections as needed by adding together the rights in some of the original sections. Take the union of the rights. For example, administrators who visit the Users panels must have at least the Profiles=r right. (8590)

- **Large Windows domain** (WIndows only)—If your Windows domain has thousands of users and you click **Add** in the Administrators panel, SBR Administrator may take many minutes for the available usernames to appear. During this time, the Steel-Belted Radius server does not respond to other copies of the SBR Administrator.

- To avoid this problem, create a local Windows group with a name such as sbradmins. Add this group to access.ini. Restart Steel-Belted Radius. Add administrators to the sbradmins group. (8480)

- **EAP Methods panel**—If you go to the EAP Methods panel, make a change, and then go elsewhere, an Unexpected Error message may appear. If this occurs, return to the EAP Methods panel, click **Refresh**, and verify that your changes appear correctly. (8454)

- **Problems deploying SBR Administrator**—If you start up the SBR Administrator normally - especially with a new version or a new server, you may occasionally see a deployer.exe has encountered a problem and needs to close or invalid signature error message. (8294)

  If you are running the SBR Administrator on Windows:

  1. Exit all copies of your Web browser,

  2. Open a Windows file browser,

  3. In the address bar, enter %APPDATA%,

4. Double-click Juniper Networks,

5. Select WebDeployer and delete it.

If running SBR Administrator on Solaris or Linux:

1. Exit all copies of your Web browser,

2. In a shell, enter

```
rm -rf ~/.junipernetworks/WebDeployer
```

- **Duplicate entries in filters.ini**—If the filters.ini file contains duplicate filter names, the Filter panel will hang. If this occurs, remove or rename one of the duplicate filters. (8794)

- **Upper-case characters in filters.ini**—If the filters.ini file contains upper-case characters in filter names, the radio button on the Edit Rule panel will be uninitialized. If this occurs, change the case of all filter names to lower case. (8799)

- **Secondary Authentication**—If you check **Include Certificate Information** under the Secondary Authentication tab for the EAP-TLS helper authentication method, then the related Funk VSAs Funk-Peer-Cert-Hash, Funk-Peer-Cert-Issue, Funk-Peer-Cert-Principal, and Funk-Peer-Cert-Subject are not added to the request. To resolve the problem, edit the *$RADIUSDIR*/system/translators/tlsauth.eap.xml file to read <object id="Include_Certificate_Info" type="boolean" default="false"(8757)

- **Admin root certificates**—If you import a root certificate with a key size larger than 2048 is imported, the SBR Administrator reports that the certificate is invalid. If this occurs, place the certificate in the ROOT directory; it won't show up in SBR Administrator, but it will be available for use by TLS and TTLS.(8754)

Installation and Import Issues

- **Windows Installer must be told server's role during upgrade**—When you upgrade from a previous release of Steel-Belted Radius, the installer does not remember whether the host was a standalone server, a primary server, or a replica server. If you give a different answer during the upgrade, results are unpredictable. To avoid this, enter the same answer (standalone, primary, or replica) as before. (8587)

- **SBR Administrator may reject a valid license**—If you enter a license key using the SBR Administrator License menu, you may see a message similar to Registration failed - '1634 xxxx xxxx xxxx xxxx xxxx xxxx' is not compatible with this edition of product, even if your license key is compatible with the edition of the product. If this occurs, use a text editor to open the radius.lic file and remove any licenses belonging to other editions. Add the new license key. Restart Steel-Belted Radius. (8550)

- **Configuring Oracle**—If you configure SBR on a Solaris computer with an Oracle 9.2 client, the configure script prompts for the path of the Oracle shared libraries:

  Enter path for Oracle shared libraries [/app/oracle/lib]:

  The default response will not work in some cases, because Oracle has moved certain 32-bit Oracle libraries to a new subdirectory. Because they are not being will not be found. the server will not start. (8446)

  To avoid this problem, reply to the prompt, replacing the default /lib response with /lib32:

  Enter path for Oracle shared libraries [/app/oracle/lib]: **/app/oracle/lib32**

- **Import**—If you export an SBR server's database and then import the data into another SBR server, the order of ordered, multi-valued attributes such as Calling-Station-ID may be changed. This only occurs if there are more than nine values. This does not affect most customers. If this occurs, consider using the LDAP Configuration Interface to move such items. (8440)

- **Directed realms**—If you configure more than 10 directed realms, the extended directed realm license key is not recognized, limiting the number of directed realms to 10. If this occurs, contact Juniper Technical Support. (8789)

Centralized Configuration Management (CCM) Issues

- **Publishing**—If the scripts directory contains files larger than about 25KB, publishing can take minutes. Avoid very large scripts. (8536)

- **Editing certificate information on a replica server**—If the SBR Administrator is connected to a replica server and you make a change in the Certificates panel, the change may not be not saved, and a message box displays the following:

  </pre></BODY></HTML>

  To resolve this problem, modify the certificate information on the primary server. (8523, 8525)

- **Replicate Certificate check box**—If the SBR Administrator is connected to a primary server and you check **Replicate Certificate** in the Certificates panel before you install a certificate, an Error 500 error message appears. If this occurs, add a certificate and then check **Replicate Certificate**. (8505)

- **Statistics for replica server**—If you connect the SBR Administrator to the primary server, open the **Statistics:System** panel, and select a replica server to view, the replica server statistics may not appear. If this occurs, connect the SBR Administrator to the replica of interest and open the **Statistics:System** panel. (8558)

- Statistics for replica server—If you connect the SBR Administrator to a replica server and open one of the Statistics panels, the replica server statistics may not appear. If this occurs, select the name of the replica server in the **Server:** drop-down list. When the name of the replica server appears, click it. (8558)

- **Startup of a replica server**—If you start a replica server when the primary is unreachable, the replica server may fail to start. Contact Technical Support for a workaround. (8434)

- **Enabling a replica server**—If you connect SBR Administrator to the primary server, you click **Add** in the Replication panel to add a replica, and then click the Enable check box in the Add dialog, the new setting for Enable may be discarded after you click OK. If this occurs, use the **Enable** check box on the Edit dialog. (8438)

- **Interaction with LCI**—If you change your configuration using the LDAP Configuration Interface (LCI), the primary's status should change to Modified, but it does not. If this occurs, publish anyway. (6428)

Miscellaneous Issues

- **Account lockout**—If you have the lockout feature enabled, you have enabled the TTLS or PEAP method enabled, and you have the Native User, LDAP, or SQL method enabled, then a common outer username, such as anonymous, can be locked out, which can deny access to many users. If this occurs:

  1. Open the Order of Methods panel.

  2. Select in turn Native User, LDAP, and SQL (whichever is enabled).

  3. Choose EAP Setup from the context menu.

  4. Check the Handle via Auto-EAP First box. (8456)

- **Missing audit information**—If you auditing and then check or uncheck the **Replicate Trusted Root Certificates** check box in the Trusted Root Certificates panel or you add a license key through SBR Administrator, the audit log has no record of this. (8420, 8380)

- **Tunnels**—If you configure a tunnel but do not set the Maximum Open Tunnels value for the tunnel, the RADIUS diagnostic log contains a message similar to the following:

  > 04/27/2006 03:11:27 Failed to decrement usage count for CINGULAR.COM as it no longer exists

  To avoid this, set a Maximum Open Tunnels value (which can be large). (7458)

- **SNMP** (Solaris/Linux only)—If you are running the Steel-Belted Radius SNMP agent on a multihomed host, the value of the agent address SNMP attribute may differ from the actual source IP address when the agent sends traps or alarms. (7227)

- **No stored procedures with MySQL**—If you use an SBR SQL plug-in with a MySQL database, the SQL plug-ins cannot use stored procedures, as MySQL does not support the Call statement. (8130)

- **Dictionary Conflict**—If you specify UseMasterDictionary = 1 in radius.ini and two of your vendor-specific dictionaries associate a particular attribute number with different types (such as string and int), then the attribute value that Steel-Belted Radius returns may be incorrect. To avoid this, specify UseMasterDirectionary = 0 in radius.ini. (7217)

- **Hang during shutdown**—If you stop the SBR server and an error occurs when disconnecting from a database or an LDAP server, Steel-Belted Radius may hang. If this occurs, use the sbrd stop force command to stop the demon (UNIX) or stop the service (Windows). (8435)

- **Current sessions in LCI**—If you use the LCI to display current sessions on Windows or Linux, Framed-ip-address attributes are displayed in reverse byte order. (8780)

- **LDAP Authentication**—If you SSL for LDAP authentication, Steel-Belted Radius may crash. If this occurs, contact Juniper Technical Support. (8729)

Resolved Issues

The following issues from previous releases have been resolved in the Steel-Belted Radius release 6.0.*x* software. The identifier in brackets is the tracking number in our bug database.

Problems Resolved in Release 6.0.1

Steel-Belted Radius release 6.0.1 corrects a problem in which Steel-Belted Radius could exhaust all threads under conditions of extremely heavy load. [8790]

Problems Resolved in Release 6.0.0

- Steel-Belted Radius now supports Accounting files greater than 2GB. [8304]

- A USR2 signal could hang Linux Steel-Belted Radius if JDBC-SQL was not enabled. [8285]

- Accounting routed proxy did not preserve response attributes. [8114]

- A vulnerability in OpenSSL (see http://www.openssl.org/news/secadv_20060905.txt) has been resolved. [7907]

- Support for SQL “dynamic cursors” has been added. [7832]

- A problem where performing ldapcompare operations against the LCI could cause a segmentation fault has been resolved. [7831]

- EAP-Identifier was incorrectly incremented in EAP-Success messages. [7829]

- In LDAP authentication, onFound after onNotFound didn't work. [7823]

- Support has been added for sunmd5 password encryption. [7815]

- Support has been added for DHCP option 61. [7677]

- Support has been added for single-octet [int1] checklist attributes. [7676]
- TLS CRL cache files were not deleted. [7615]
- Several dictionaries [hpprocurve, nokiaac, Nortel_7220] were missing from Steel-Belted Radius. [7514]
- When a user loses a VPN connection, the SBR Administrator drops but leaves an active admin session hung. [7507]
- Large service type mapping files would cause severe initialization delays. [7460]
- An issue with RSA New PIN mode prompts has been resolved. [7432]
- Accounting keepalive packets were not supported. [7355]
- Large attribute lists [for example, profiles] could cause heap corruption. [7302]
- Multiple Acct-Delay-Time attributes were added to proxied Accounting-Requests and accounting logs. [7279]
- RADIUS User-name attribute, not EAP user-name, was used when pre-fetching credentials. [7237]
- JRE upgraded to support SMP Multiprocessor Kernel on RedHat Linux. [7212]
- New CRLs were not retrieved during expiration grace period. [7167]
- EAP-NAK would result in Access-Reject rather than use of another method. [7118]
- PEAP/TTLS tunneled user-name was not logged. [7094]
- Session time extension was not correctly returned. [3300]

Documentation Errata

The following issues have been identified in the Steel-Belted Radius Release 6.0 documentation.

Getting Started Guide

- The *Getting Started* Guide implies that Windows Vista is fully supported. Windows Vista is supported for basic demonstration purposes only.

Reference Guide

- The *Reference* Guide incorrectly states that Windows 2000 is supported. Release 6.0.x of the Steel-Belted Radius software is not compatible with Windows 2000.

Upgrade Instructions

Windows/Solaris/Linux: Refer to the *Steel-Belted Radius Getting Started Guide* for information on upgrading your Steel-Belted Radius software to release 6.0.*x*.

SBR Appliance: Upgrading the Steel-Belted Radius Appliance to release 6.0.*x* is not supported at this time. Refer to the *Steel-Belted Radius Appliance Upgrade Guide* for information on upgrading your Steel-Belted Radius Appliance to Release 5.4.*x*.

List of Technical Publications

The documentation for Steel-Belted Radius consists of the following manuals, which can be downloaded from the Juniper Networks Technical Publications Web page located at http://www.juniper.net/techpubs/software/aaa_802/sbr.html.

- *Steel-Belted Radius Getting Started Guide* —Describes how to install the Steel-Belted Radius software on a server running the Solaris operating system, the Linux operating system, or the Windows XP/Windows Server 2003 operating system.
- *Steel-Belted Radius Administration Guide*—Describes how to configure and administer the Steel-Belted Radius server software.
- *Steel-Belted Radius Reference Guide*—Describes the configuration files and settings used by Steel-Belted Radius.
- *Steel-Belted Radius Scripting Guide*—Describes how to use scripts written in the JavaScript programming language to enhance the RADIUS request processing capabilities of the Steel-Belted Radius server.

Documentation Feedback

We encourage you to provide feedback, comments, and suggestions so that we can improve the Steel-Belted Radius documentation. You can send your comments to techpubs-comments@juniper.net, or fill out the documentation feedback form at http://www.juniper.net/techpubs/docbug/docbugreport.html. If you are using email, please be sure to include the following information with your comments:

- Documentation name
- Documentation part number
- Software release version
- Page number

Modified Open-Source Software

Embedded in this version of Steel-Belted Radius is open-source software that Juniper Networks, Inc. has modified. The modified software includes:

- LDAP C SDK from The Mozilla Foundation
- HTTPClient from Ronald Tschalär
- sunmd5.c, from The OpenSolaris Project

You can obtain the source code for the above modifications by requesting them from Juniper Technical Support.

Contacting Juniper Technical Support

For technical support, contact Juniper Networks at support@juniper.net, or at 1-888-314-JTAC (in the United States) or 408-745-9500 (outside the United States).

Check our website (http://www.juniper.net) for additional information and technical notes. When you are running SBR Administrator, you can choose **Web > Steel-Belted Radius User Page** to access a special home page for Steel-Belted Radius users.

When you call technical support, please have the following at hand:

- Your Steel-Belted Radius edition and release number (for example, Steel-Belted Radius/Global Enterprise Edition Release 6.0.1).
- Information about the server configuration and operating system, including any OS patches that have been applied.
- For licensed products under a current maintenance agreement, your license or support contract number.
- Question or description of the problem, with as much detail as possible.
- Any documentation that may help in resolving the problem, such as error messages, memory dumps, compiler listings, and error logs.